IET Circuits, Devices & Systems

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SPECIAL ISSUE ON:
Low Voltage Low Power Integrated Circuits and Systems

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Interest in low voltage integrated circuits and systems has continued over several decades, as system power constraints and advanced deep submicron technologies require lower and lower supply voltages. Nowadays, a new trend towards extremely low voltage and ultra-low power circuits is emerging. Among others it is motivated by the increased interest in implantable or wearable devices for biomedical monitoring, sensor and Internet of Things networks and other similar applications. The aforementioned systems are often predicted to be supplied with non-conventional energy sources, which can provide power at a very low voltage level. The increasing demands for both, low supply voltage and energy efficiency often have a detrimental effect upon analog and mixed-signal circuits, which must operate with reduced voltage headroom and power dissipation. Therefore, the most challenging task for analog designers is to maintain the circuit performances by developing novel circuit structures capable to operate with low supply voltage.

The main focus of this special issue is on the research challenges relating to the theory, design and applications of low voltage integrated circuits and systems. The topics to be covered are, but not limited to, as follows:

Topics of interest:

- Theory, design and new applications of low-voltage, low-power circuits
- New trends in low voltage analog circuit design
- Non-conventional low voltage analog and digital design techniques
- Implantable and wearable devices for biomedical monitoring applications
- Low-voltage low-power sensor interfaces
- Low voltage low-power Systems on Chip (SoC)
- Low voltage circuits for Internet of Things (IoT) applications
- Supply and energy harvesting blocks
- Battery operated systems

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